

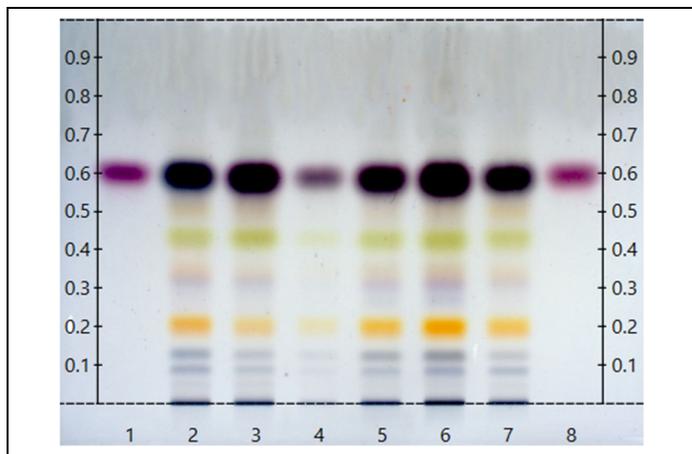
Certificate Issued To:  
**Mountain Rose Herbs**  
12661 Hoover St  
Garden Grove, CA 92841  
USA



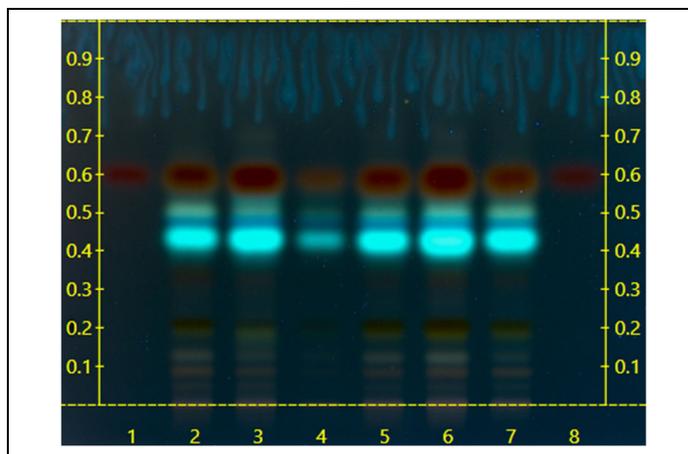
Work performed at:  
**Alkemist Labs**  
12661 Hoover Street  
Garden Grove, CA 92841  
714-754-HERB (4372)  
714-668-9972 (FAX)  
Sales@Alkemist.com  
www.Alkemist.com

**Certificate of Analysis: Kava Kava Root (M13016-XR)**  
High Performance Thin-Layer Chromatography with Photo-Documentation

1



2



Company Name: Mountain Rose Herbs  
Title: Kava Kava Root  
Plant Part: root  
Sample Received: 04/28/21  
Sample Packaging: Clear Reclosable Plastic Bag  
Form of Botanical: cut and sifted  
Appearance: Tan cut and sifted root  
Source Location: Mountain Rose Herbs  
Lot Number: (M13016-XR) → Lanes 4(0.5µl), 5(3µl), 6(6µl)  
Sample: 21118AVW\_2  
Latin Name: *Piper methysticum* G.Forst. [Piperaceae]  
Reference Sample: Lane 2(3µl) (TA22209MRH), Lane 3(3µl) (TA10699AHP1), Lane 7(3µl) (TA24205PB) *Piper methysticum* (root); held at Alkemist Labs, Garden Grove, CA.  
Analyst: A. Davis, N. Afendikova, M. Edwards, S. Kabbaj, N. Hoang, K. Tran, J. Lopez, J. Mares 154799  
Sample Preparation: 0.3g+3mL Methanol, sonicate/heat at 50°C for 30 min.  
Stationary Phase: Macherey-Nagel Silica gel 60 RP-18W F254S HPTLC plates  
Mobile Phase: Water: acetonitrile: Methanol: Acetic Acid [4/3/3/0.01]  
Detection: (1) Vanillin/Sulfuric, 110°C, 2min, vis (Reich, E., 2007)  
(2) Vanillin/Sulfuric, 110°C, 2min, 366nm (Reich, E., 2007)  
Reference Standard: Lanes 1(3µl) and 8(3µl) Kavain (00011300-1973, CHR)  
Reference Source: Method Developed by Alkemist Labs  
IDT-SOP-72-01

**Comments & Conclusions:** Lanes 4, 5, 6 are the test sample Kava Kava Root (M13016-XR). Lanes 2, 3, 7, are the reference samples used for comparison. This test sample, Kava Kava Root (M13016-XR) is consistent with the chromatographic profile of the reference samples of *Piper methysticum*, used above. **This test sample Kava Kava Root (M13016-XR) has characteristics of *Piper methysticum* root.**

**NOTE:** The above conclusion may be a function of the natural variance found in botanicals &/or the extraction process used to create specific extracts. The growing and drying conditions, age, seasonal variations, geographic location, extraction solvents, etc. all play a role in the phytochemical fingerprint of botanicals as well as their extracts; hence, chromatographic variations are expected.

Examined, Reviewed & Authorized by: Khanh N Tran, HPTLC, R&D Supervisor, Alkemist Labs

Report Date: 05/05/21

ISO/IEC 17025



CERTIFICATE #3851.01

Note: Any unidentified lanes in the above chromatograms are confidential and may represent internal studies or other test samples not related to M13016-XR. This report applies to the sample investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. This report is for the exclusive use of the party who requested the report and not for public dissemination or use by third parties, including for promotional purposes, without the prior written permission of Alkemist Labs, Inc. This report provides technical results for a specific sample and the report shall not be altered, modified, supplemented or abstracted in any manner. Any violation of these conditions renders the report and its results void. © 2021 Alkemist Labs, Inc. All Rights Reserved